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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,864	09/30/2003	Rahul Gupta	5367-230	6285

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Thomas Langer, Esq.
Cohen, Pontani, Lieberman & Pavane
Suite
551 Fifth Avenue
New York, NY 10176

EXAMINER

LIN, JAMES

ART UNIT	PAPER NUMBER
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1762

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/674,864	GUPTA ET AL.	
	Examiner	Art Unit	
	Jimmy Lin	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 16-21 is/are pending in the application.
- 4a) Of the above claim(s) 3,5,7,11,13,14,16 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6,8-10,12 and 18-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 4, 6, 8, 10, 12, and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (U.S. Patent 6,830,494) in view of Ozin '030.

Yamazaki teaches a method of making an electroluminescent (EL) device (abstract), wherein pattern layers 145,146 are coated onto a substrate (col. 5, lines 5-17; Fig. 4). The substrate can be made of glass (col. 5, lines 36-40). EL materials such as PPVs can be deposited between the pattern layers (col. 11, line 60-col. 12, lines 2).

Yamazaki does not explicitly teach that pressing a cover layer onto the pattern layer, dipping the substrate to form EL layers through capillary action, and removing the cover layer.

Ozin teaches such methods of using a mask (i.e., a cover layer) to deposit materials through capillary action and removing the mask, as discussed above. Ozin also teaches that materials such as poly-p-phenylenevinyls (PPVs) can be deposited onto glass substrates [0238]. The materials' properties can include electroluminescence [240]. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65

USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have formed the EL layer of Yamazaki using the colloidal crystal PPV of Ozin as the particular light emitting layer with a reasonable expectation of success because Ozin teaches that such materials can exhibit electroluminescent properties. In addition, it would have been obvious to one of ordinary skill in the art at the time of invention to have deposited PPV on the glass substrate of Yamazaki via capillary action with a mask with a reasonable expectation of success because Ozin teaches that such methods can be used for depositing PPV onto glass substrates.

The removal of the mask leaves behind the pattern layer and the solution spread because the mask is not fixedly attached to the pattern layer or substrate.

Claims 8,12: Yamazaki and Ozin do not explicitly teach removing the mask after each of the EL layers are formed. However, each of the hole injecting/transporting layer, light emitting layer, and electron injecting/transporting layer requires a different material. For example, the hole transporting/injection material can be TPD, DEH, STB, and MTDATA (col. 19, lines 22-29), which are materially different from PPV. Using the same mask to deposit the all the materials could contaminate subsequent layers. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used to have used a different mask to deposit the different EL layers. One would have been motivated to do so in order to reduce the chance for contamination of the layers.

Claim 4: Yamazaki teaches that the EL layer can comprise of multiple layers, such as a hole injecting/transporting layer, a light emitting layer, and an electron injecting/transporting layer, but does not explicitly teach that such layers are deposited with a mask through capillary action. However, depositing all the EL layers using the same method for forming the PPV layers would reduce the amount of equipment needed for deposition. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have deposited all the EL layers of Yamazaki via capillary action before removing the mask. One would have been motivated to do so in order to reduce equipment costs.

Claims 6,10: Yamazaki and Ozin do not explicitly teach forming additional layers (i.e., pressing the same mask back onto the pattern layer, depositing via capillary action, and removing the mask) after the mask has been removed. However, Yamazaki teaches that pixels red and

green require different types of PPV materials (col. 11, line 60-col. 12, line 2). Thus, the mask must be repositioned between the deposition of the red pixels and the green pixels in order to deposit the red material into the red pixel without depositing into the green pixel, and vice versa. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have formed another stack of EL layers via the capillary action of Ozin after the mask has been removed at least once because Yamazaki teaches that at least the red pixels and the green pixels require different materials. One would have been motivated to do so in order to reposition the mask to only deposit into the desired pixels.

Claim 18: Ozin teaches that the mask is pressed against a pattern layer. Accordingly, the mask forms the upper portion of the pattern layer.

Claims 19-21: Yamazaki teaches that the light emitting material can be a polymer such as PPV can be used for a green luminescing material and polyalkylphenylene can be used in for blue luminescing material (col. 11, line 65-col. 12, line 2)

4. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki '494 in view of Ozin '030 as applied to claims 1 and 8 above, and further in view of Lu (U.S. Patent 6,630,785).

Yamazaki and Ozin are discussed above. Yamazaki teaches that the pattern layers formed on the substrate define the pixels (Fig. 4), but does not explicitly teach that the pattern layer can be selectively removed to define the predetermined region.

Lu teaches a method of making EL devices (title), wherein a pixel-defining layer 60 is formed on a substrate (Fig. 1). The pixel-defining layer can be formed in patterns through photolithography (i.e., selectively removing portions of the layer to define a region) (col. 4, lines 22-23). The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have formed the pattern layers of Yamazaki using the method of Lu with a reasonable expectation of success because Lu teaches that such processes are suitable for making pixel-defining layers in EL devices.

Yamazaki teaches that at least one channel is formed along at least one edge of said pattern layer 145 (Fig. 4).

Response to Arguments

5. Applicant's arguments, see pgs. 10-11, filed 2/5/2007, with respect to claims 1-2 have been fully considered and are persuasive. The rejection of the claims over Ozin '030 has been withdrawn.

6. Applicant's arguments filed 2/5/2007 have been fully considered but they are not persuasive.

Claims 1, 4, 6, 8, 10, 12, and 18 as rejected over Yamazaki '494 and Ozin '030:

The Applicant argues on pg. 12 that a person of ordinary skill in the art would not seek to combine the ink-jetting method of Yamazaki with any one of the methods disclose in Ozin to obtain a patterned coating by leaving behind a substrate layer coated with a spacer/pattern layer and a solution spread to a predetermined region defined by the spacer/pattern layer as claimed. However, the patterning as required by Ozin is already accomplished in the method of Yamazaki, as shown in Fig. 4 of Yamazaki. The only element missing from the capillary deposition of Ozin is the masking means. In light of these teachings, one of ordinary skill in the art would have readily known to have used the separation layers 145,146 as the patterning required by Ozin and to have used a masking means to perform the capillary method. The removal of the mask leaves behind the pattern layer and the solution spread because the mask is not fixedly attached to the pattern layer or substrate. Therefore, the combination of Yamazaki and Ozin teaches all the limitations of the claims.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

Art Unit: 1762


MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is 571-272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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KEITH HENDRICKS
PRIMARY EXAMINER